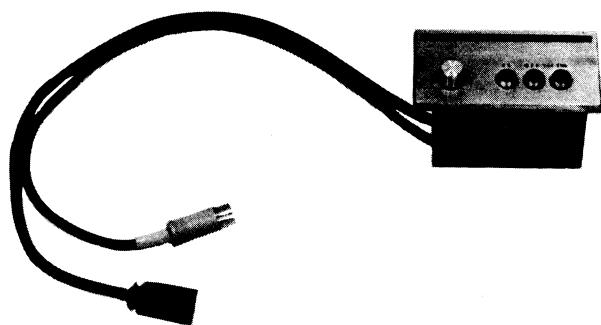


TTS-4000



Set using ISO screws

GEP Model



SONY®
SERVICE MANUAL

TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
SERVICING NOTES		1
1.	TECHNICAL DESCRIPTION	
	Block Diagram	2
2.	DISASSEMBLY PROCEDURES	
2-1.	Turntable Removal	3
2-2.	Turntable Base Removal	3
2-3.	Chassis Removal	3
3.	DIAGRAMS	
3-1.	Schematic Diagram	5~6
3-2.	Mounting Diagram	7~8
4.	REPACKING	9
5.	EXPLODED VIEWS	10~11
6.	ELECTRICAL PARTS LIST	12~13

SERVICING NOTES

Operational check should be performed by putting the platter in place. This causes difficulty of electrical check at operation. A pair of special

extension cord (1-534-731-11) is ready at the factory service department. By using the extension cord, operational check is performed as illustrated.

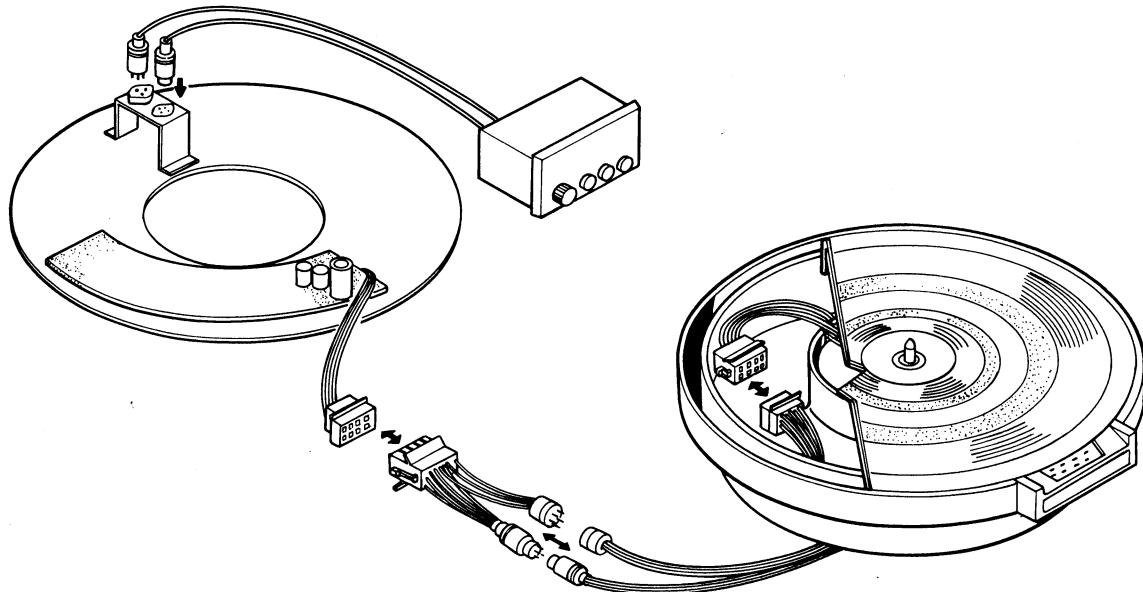


Fig. A How to repair unit

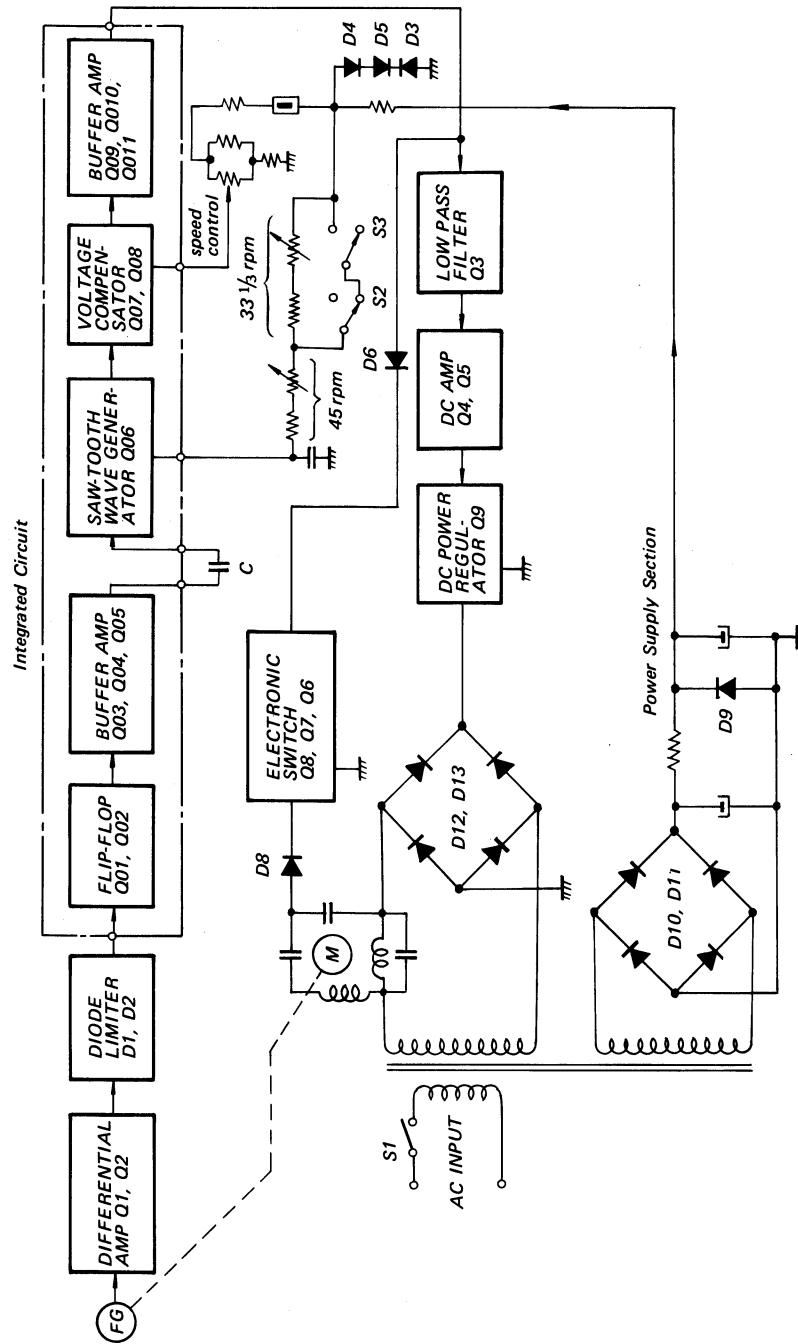
TECHNICAL SPECIFICATIONS

Speeds:	33 ¹ / ₃ , 45 rpm 3%, adjustable	Weight:	13½" (dia) x 5¾" (height)
Turntable drive:	Direct-drive system	Control Box:	116 mm (width) x 64.5 mm (height) x 66 mm (depth)
Flutter and wow:	Less than 0.03%		4-9/16" (width) x 2-35/64" (height) x 2-19/32" (depth)
Signal-to-noise ratio:	Greater than 60 dB	Turtable Assembly:	Approx. 9.8 kg (21 lb 10 oz)
Motor:	AC servo-controlled motor	Control Box:	Approx. 0.3 kg (9.6 oz)
Power consumption:	Approx. 17 watts		
Power requirements:	100, 117, 220 and 240 volts ac, 50/60 Hz		
Dimensions:	Turtable Assembly: 343 mm (dia) x 145.6 mm (height)		

SECTION 1

TECHNICAL DESCRIPTION

BLOCK DIAGRAM



SECTION 2

DISASSEMBLY PROCEDURES

2-1. Turntable Removal

1. Remove the rubber mat from the turntable.
2. Insert your fingers into the two turntable holes with both thumbs placed on the center spindle.
3. Remove the turntable by pulling it straight up.

2-3. Chassis Removal

1. Remove the turntable as described in Procedure 2-1.
2. Remove the ten screws (marked with ■ in Fig. 2-1.) securing the chassis to the turntable base. This frees the chassis.

2-2. Turntable Base Removal

1. Remove the turntable as described in Procedure 2-1.
2. Disconnect the two control box cables at the bottom.
3. Remove the four screws (marked with ▲ in Fig. 2-1) securing the turntable base to the wooden case. This frees the turntable base.

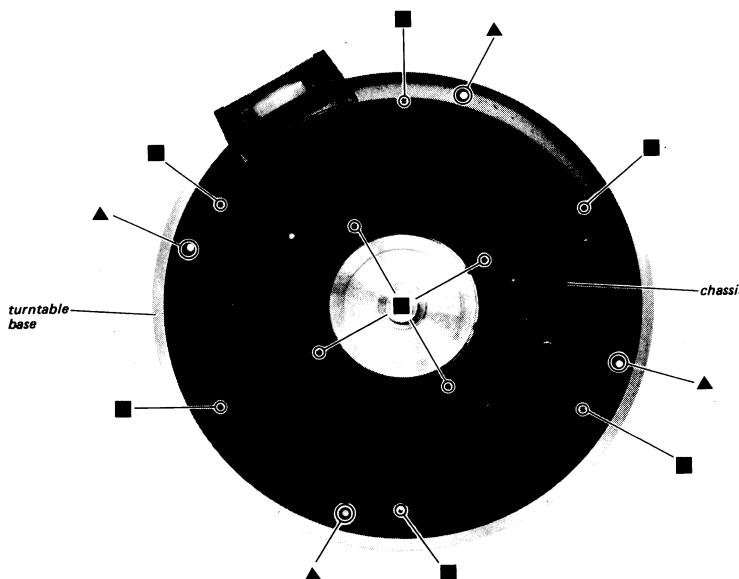


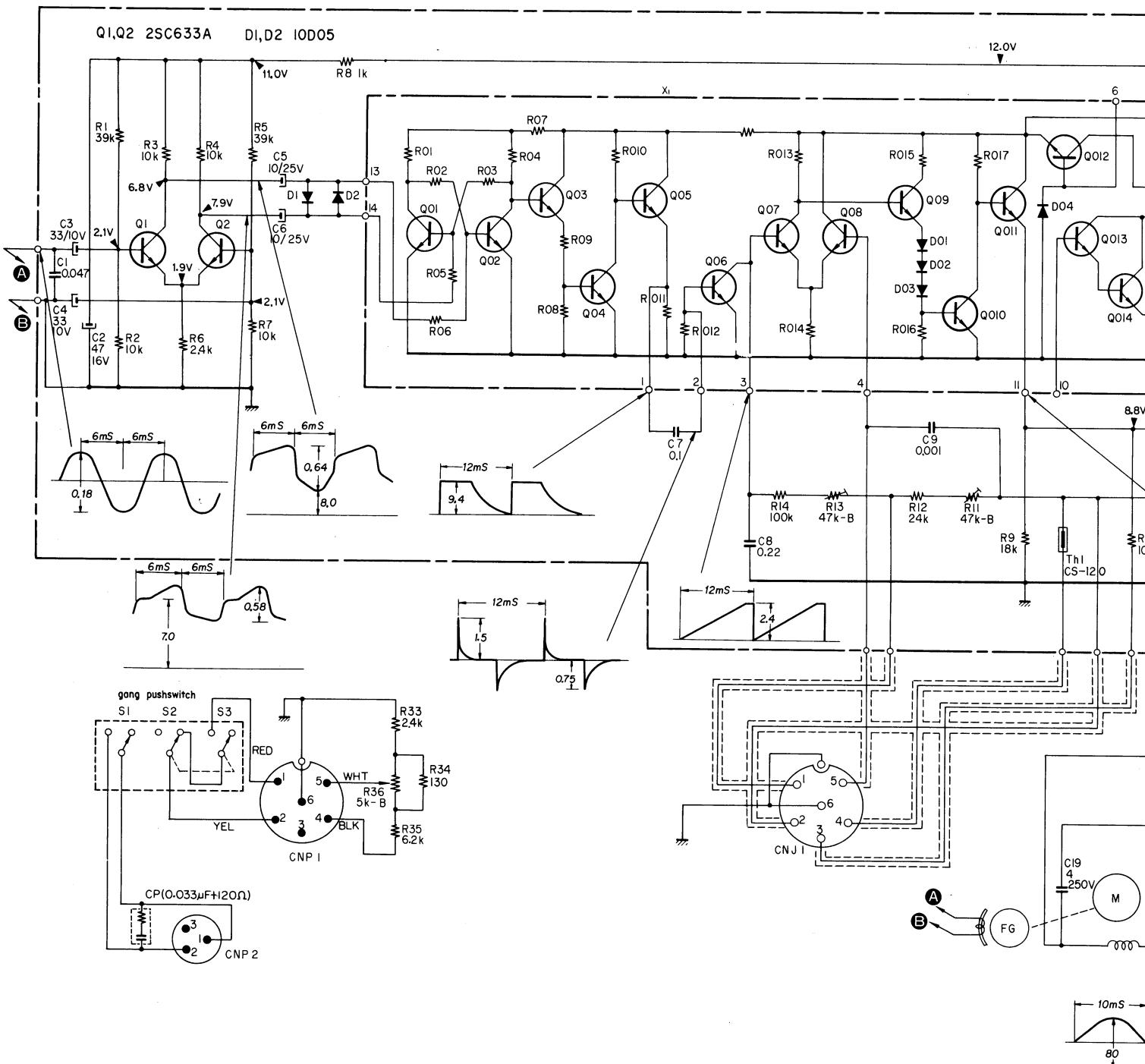
Fig. 2-1. Turntable base and chassis removal

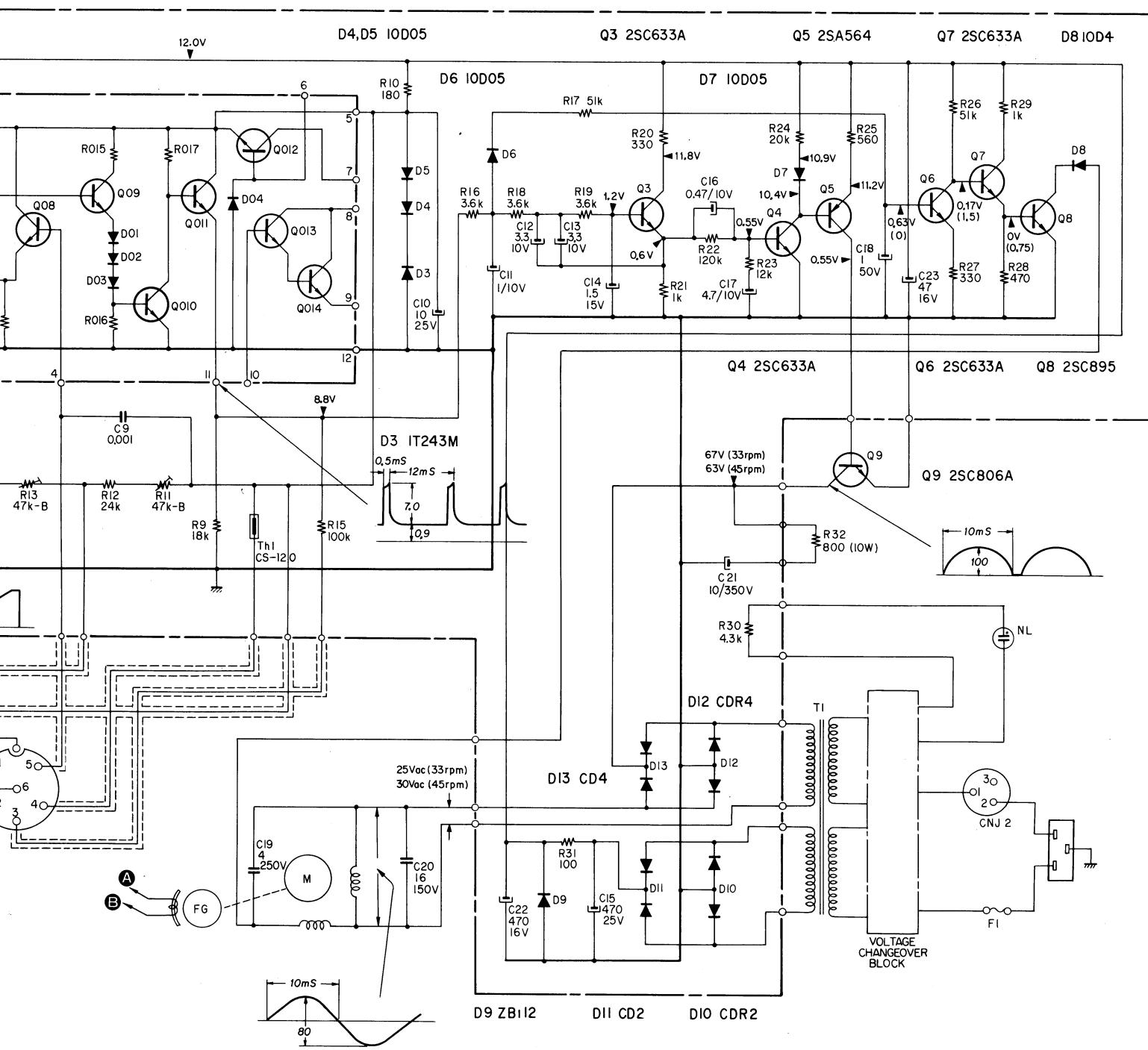
MEMO

SECTION 3

DIAGRAMS

3-1 SCHEMATIC DIAGRAM





Note:

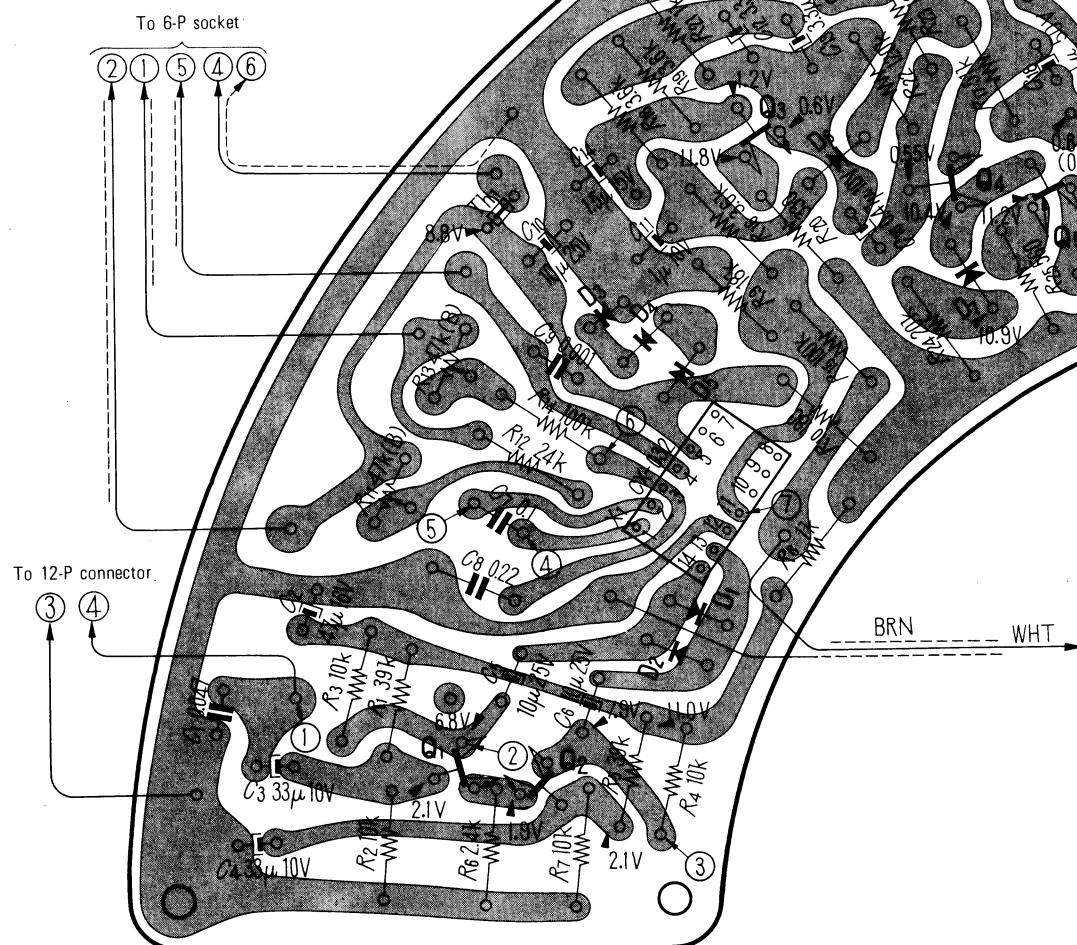
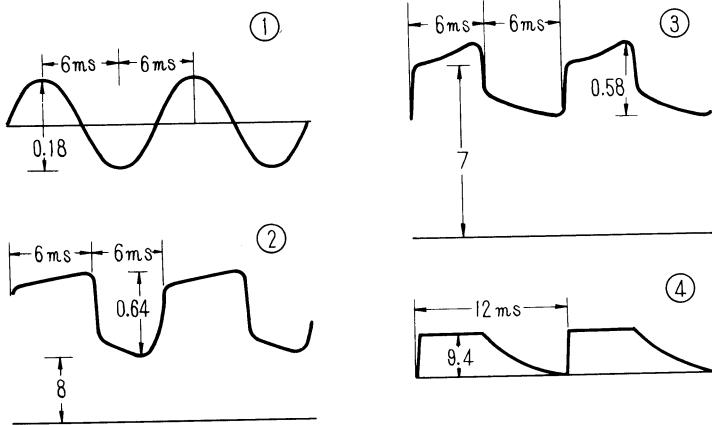
All resistance values are in ohms. K=1,000, M=1,000k

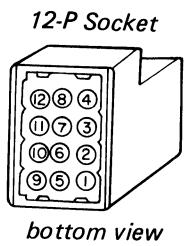
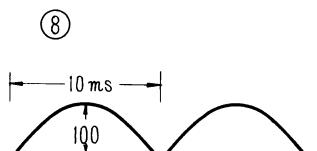
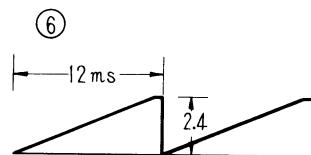
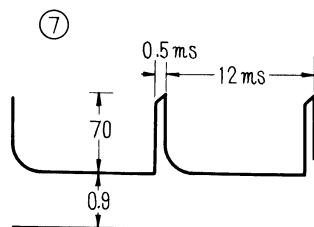
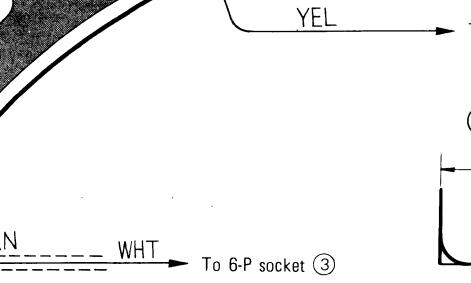
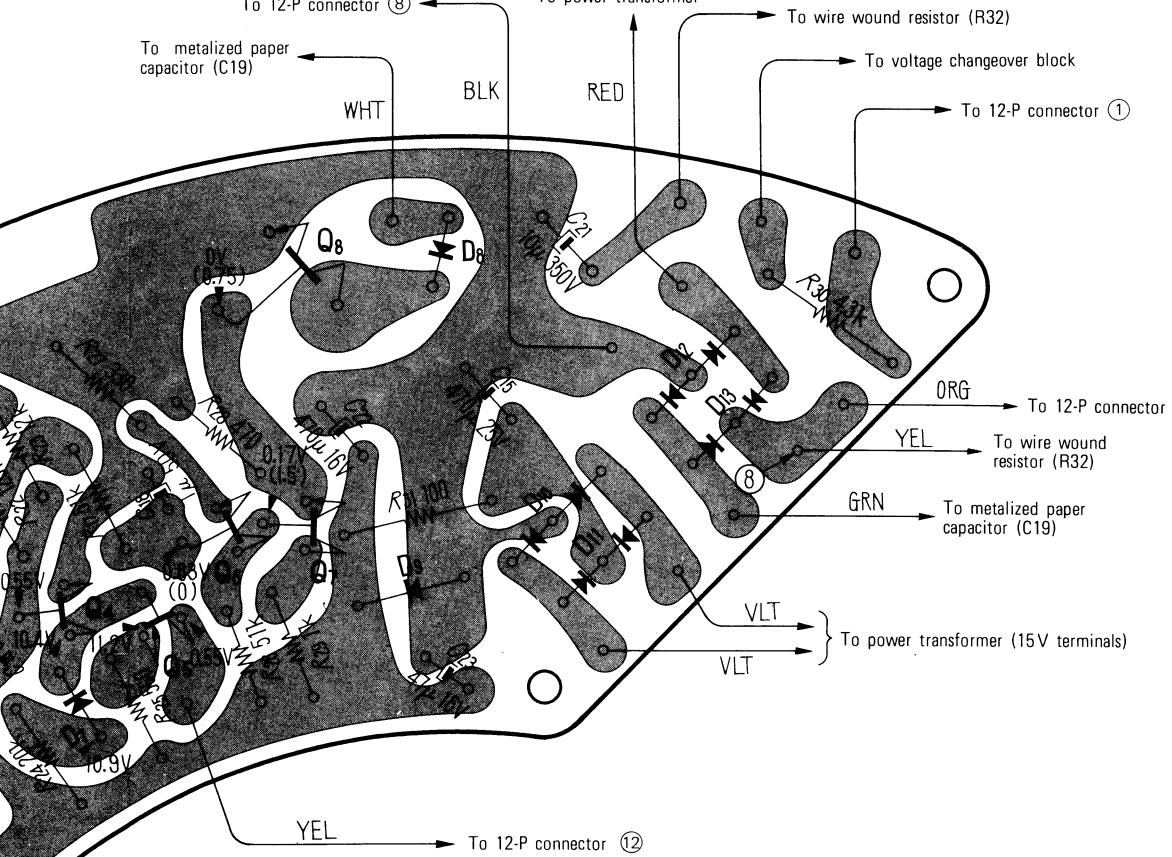
All capacitance values are in μF except as indicated with p, which means μF .

All voltages represent an average value and should hold within $\pm 10\%$.

All voltages are dc measured at 33-1/3 rpm operation with a VOM which has an input impedance of 20k ohms/volt. No signalin.

Voltages in () are measured with electromagnetic brake operated.





SECTION 4

REPACKING

The TTS-4000's original shipping carton and packing materials are the ideal containers for shipping the unit. However to secure the maximum protection, the TTS-4000

must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.

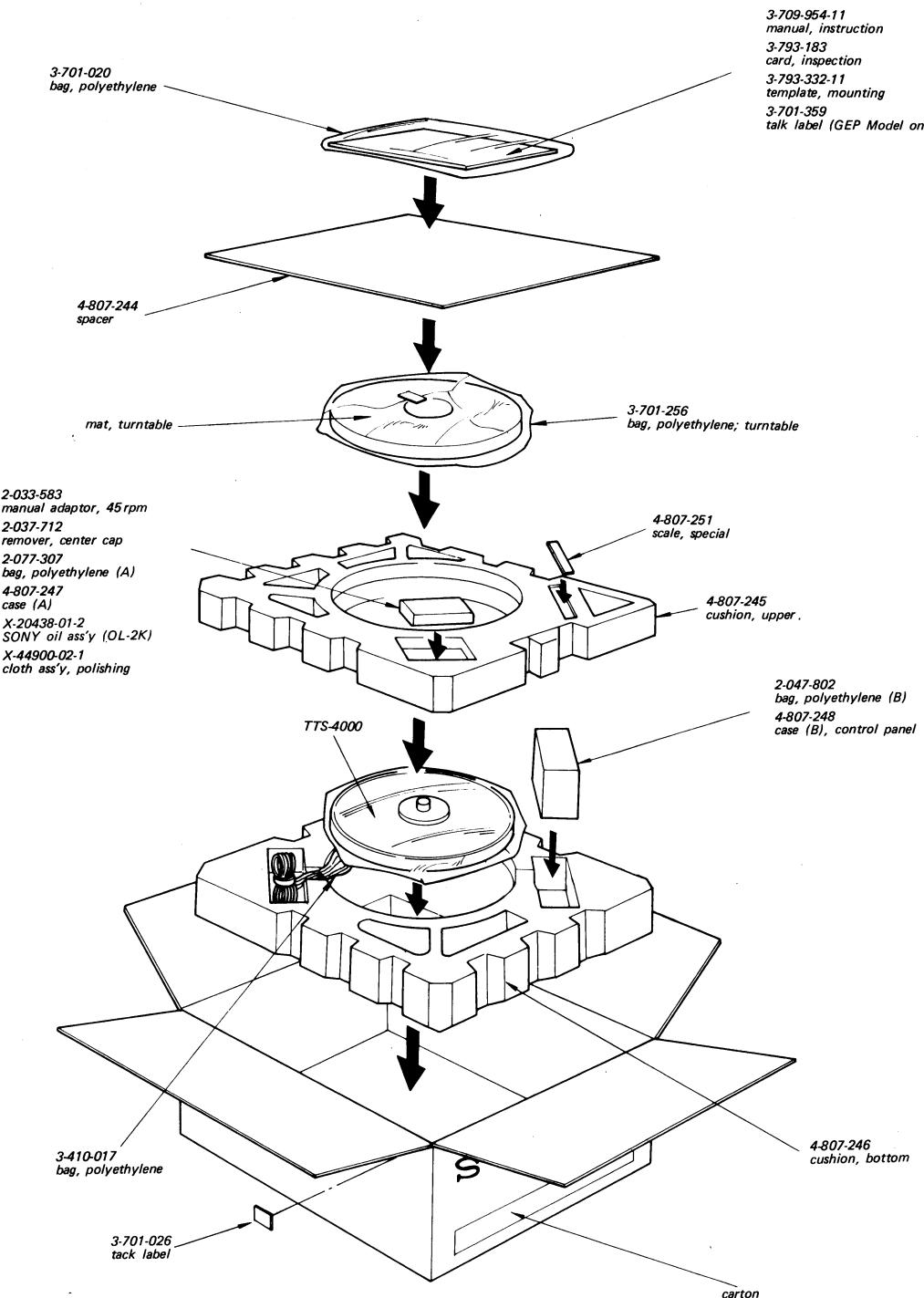


Fig. 4-1. Repacking

SECTION 5

EXPLODED VIEW

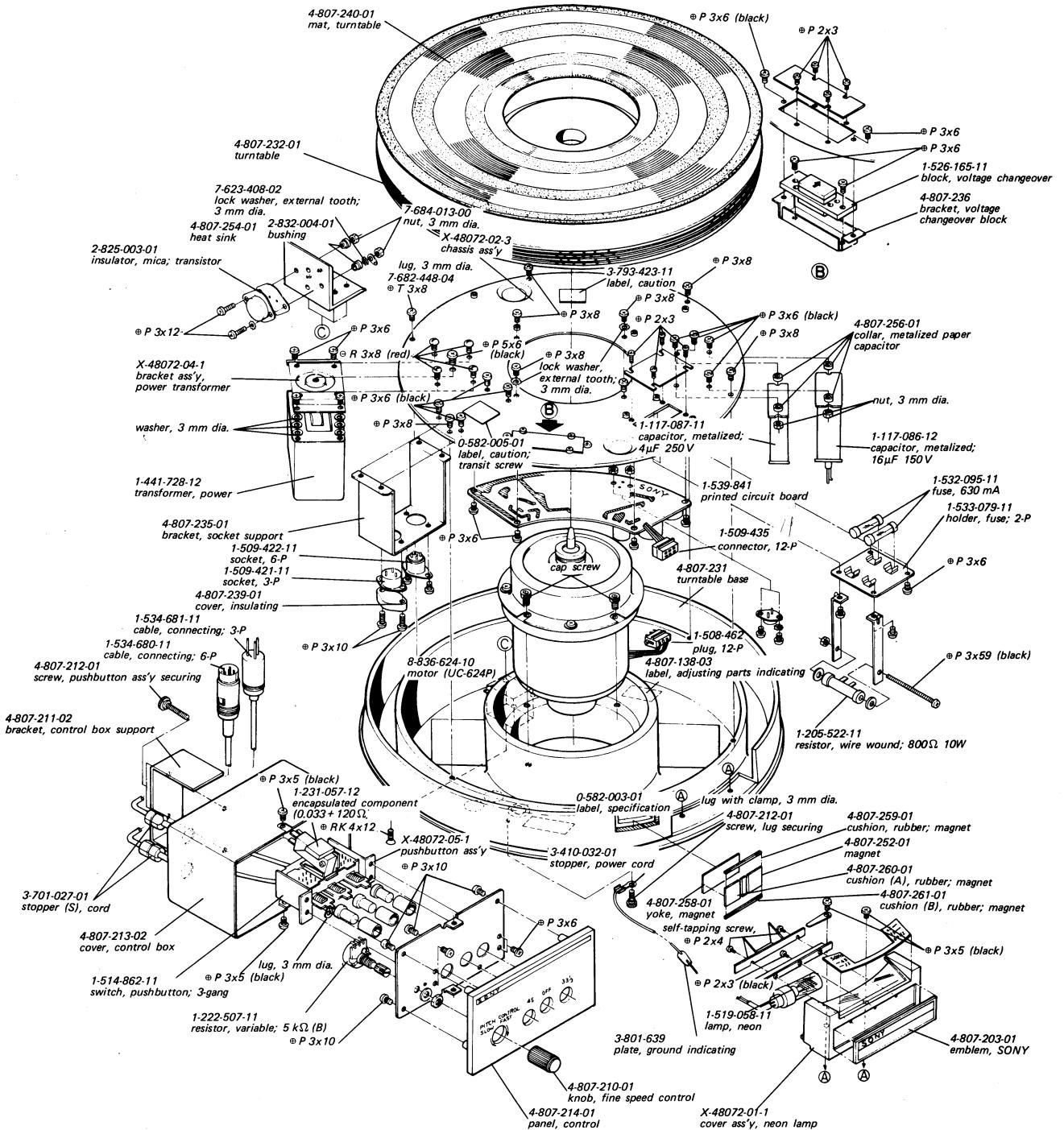
(1) The following chart will help you to decipher the hardware codes given in the exploded view.

— Hardware Nomenclature —

P — Pan Head Screw		SC — Set Screw	
K — Flat Countersunk Head Screw		E — Retaining Ring (E Washer)	
RK — Oval Countersunk Head Screw		W — Washer	
T — Truss Head Screw		SW — Spring Washer	
LW — Lock Washer			
N — Nut			
— Example —			

(2) To simplify the exploded view, the part numbers of normal screws, nuts, washers, and retaining rings are not expressed but summarized in the table below.

<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
7-681-363-04	screw, \oplus RK4 x 12	7-623-108-15	washer, flat; 3 mm dia.
7-682-123-05	screw, \oplus P2 x 3	7-623-112-04	washer, flat; 5 mm dia.
7-682-146-01	screw, \oplus P3 x 5	7-623-208-12	washer, spring; 3 mm dia.
7-682-147-05	screw, \oplus P3 x 6	7-623-408-02	washer, lock (ext. tooth); 3 mm dia.
7-682-149-03	screw, \oplus P3 x 10	7-623-508-01	lug, 3 mm dia.
7-682-151-01	screw, \oplus P3 x 14	7-623-058-31	lug, dual; 3 mm dia.
7-682-173-05	screw, \oplus P5 x 6	7-684-013-00	nut, 3 mm dia.
7-682-281-02	screw, \oplus K5 x 30	7-684-015-02	nut, 5 mm dia.
7-682-448-04	screw, \oplus T3 x 8	7-683-420-01	bolt, hexagon head; 4 mm dia. x 10 mm
7-685-102-25	screw, self-tapping; \oplus P2 x 4		
7-621-761-64	screw, wood; \ominus K5.1 x 25		



SECTION 6

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
SEMICONDUCTORS							
D1		diode	10D-05	C11	1-127-023	1	$\pm 20\%$ 10V solid, aluminum
D2		diode	10D-05	C12	1-127-025	3.3	$\pm 20\%$ 10V solid, aluminum
D3		diode	1T-243M	C13	1-127-025	3.3	$\pm 20\%$ 10V solid, aluminum
D4		diode	10D-05	C14	1-131-157	1.5	$\pm \frac{100}{10}\%$ 15V tantalum
D5		diode	10D-05	C15	1-121-733	470	$\pm \frac{100}{10}\%$ 25V electrolytic
D6		diode	10D-05	C16	1-127-022	0.47	$\pm 20\%$ 10V solid, aluminum
D7		diode	10D-05	C17	1-131-140	4.7	$\pm \frac{40}{20}\%$ 50V tantalum
D8		diode	10D-4	C21	1-121-180	10	$\pm \frac{100}{10}\%$ 350V electrolytic
D9		diode	ZB1-12	C22	1-121-426	470	$\pm \frac{100}{10}\%$ 16V electrolytic
D10		diode	CDR-2	C23	1-121-409	47	$\pm \frac{100}{10}\%$ 16V electrolytic
D11		diode	CD-2				
D12		diode	CDR-4				
D13		diode	CD-4				
TRANSFORMER							
T1	1-441-728	transformer, power		R1	1-244-711	39K	
Th1	8-691-001	Thermistor	CS-120	R2	1-244-697	10K	
X1	8-750-320	Integrated circuit	CX-032	R3	1-244-697	10K	
				R4	1-244-697	10K	
				R5	1-244-711	39K	
				R6	1-244-682	2.4K	
				R7	1-244-697	10K	
				R8	1-244-673	1K	
				R9	1-244-703	18K	
				R10	1-244-655	180	
				R11	1-222-955	47K (B), semi-fixed	
				R12	1-244-706	24K	
CAPACITORS							
		All capacitance values are in μF except as indicated with P, which means $\mu\mu F$.		R13	1-222-955	47K (B) semi-fixed	
C1	1-105-681-12	0.047 $\pm 10\%$	50V mylar	R14	1-244-721	100K	
C2	1-121-409	47 $\pm \frac{100}{10}\%$	16V electrolytic	R15	1-244-721	100K	
C3	1-121-402	33 $\pm \frac{100}{10}\%$	10V electrolytic	R16	1-244-686	3.6K	
C4	1-121-402	33 $\pm \frac{100}{10}\%$	10V electrolytic	R17	1-244-714	51K	
C5	1-121-398	10 $\pm \frac{100}{10}\%$	25V electrolytic	R18	1-244-686	3.6K	
C6	1-121-398	10 $\pm \frac{100}{10}\%$	25V electrolytic	R19	1-244-686	3.6K	
C7	1-105-685-12	0.1 $\pm 10\%$	50V mylar	R20	1-244-661	330	
C8	1-106-057-12	0.22 $\pm 5\%$	50V mylar	R21	1-244-673	1K	
C9	1-105-661-12	0.001 $\pm 10\%$	50V mylar	R22	1-244-723	120K	
C10	1-121-398	10 $\pm \frac{100}{10}\%$	25V electrolytic	R23	1-244-699	12K	
				R24	1-244-704	20K	
				R25	1-244-667	560	
				R26	1-244-714	51K	
				R27	1-244-661	330	
				R28	1-244-665	470	
				R29	1-244-673	1K	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R30	1-244-888	4.3K	$\pm 5\%$	$\frac{1}{2}W$			MISCELLANEOUS
R31	1-244-849	100	$\pm 5\%$	$\frac{1}{2}W$		1-508-462	Plug, 12-P AMPLOK with lead wires
R32	1-205-522	800 Ω	10W	wire wound		1-509-421	socket, 3-P
R33	1-244-682	2.4k Ω				1-509-422	socket, 6-P
R34	1-244-652	130 Ω				1-509-435	connector, 2-P AMPLOK with lead wires
R35	1-244-692	6.2k Ω			NL	1-519-058	lamp, neon
R36	1-222-507	5K(B), variable			VS	1-526-165-11	voltage changeover block
						1-533-026-31	socket, fuse; 3-P (NEP Model only)
SWITCHES					M	8-836-624-10	motor UC-624P
S1	1-514-862						
S2		switch, push; 3-gang					
S3							